

## ABSTRACT

A dielectric barrier discharge lamp lighting device includes a transformer that supplies a driving voltage to a dielectric barrier discharge lamp from a secondary coil, and a driving circuit that controls an input voltage to the transformer to supply a driving voltage with a driving frequency  $f_d$  to the dielectric barrier discharge lamp. The self-resonant frequency  $f_r$  of the secondary coil, which is measured with the primary coil of the transformer being open, is equal to the driving frequency  $f_d$  or a frequency in the vicinity of the driving frequency  $f_d$ . This frequency  $f_r$  satisfies, for example,  $0.9f_d \leq f_r \leq 1.3f_d$ .